

on the middle and north Pacific coasts, and was 1 to 2 below the normal in the New England, middle, south Atlantic, and east Gulf states, the Ohio Valley and Tennessee, the Lake region, the Missouri Valley, on the northeast and middle-eastern slopes of the Rocky Mountains, and on the south Pacific coast. On the southeast slope of the Rocky Mountains the mean temperature was about 2 above the normal, and in the extreme northwest it was about 1 above the normal. In the west Gulf states and over the southern plateau region the mean temperature averaged about normal for the period named.

YEARS OF HIGHEST MEAN TEMPERATURE FOR JUNE.

At Northfield, Vt., Rochester, N. Y., Alpena, Marquette, and Kalamazoo, Mich., Abilene and Silver Falls, Tex., Fort Supply, Ind. T., Fort Stanton, N. Mex., Valentine, Nebr., Huron and Rapid City, S. Dak., the mean temperature for the current month was the highest reported for June during the respective periods of observation. The highest mean temperature for June was reported at points on the immediate New England and New York coasts in 1892; in the Carolinas, northern Georgia, and eastern Tennessee, and from Lower Michigan to the lower Ohio valley in 1890; from the Oregon coast over the northern plateau and the north part of the middle plateau in 1889; on the south Pacific coast in 1883; from the middle-eastern slope of the Rocky Mountains over the south part of the Gulf States in 1881; in New York and Pennsylvania in 1886; and from Virginia and Maryland over Kentucky and central Tennessee in 1874.

YEARS OF LOWEST MEAN TEMPERATURE FOR JUNE.

At Portland, Me., Nantucket, Mass., Helena, Mont., Fort Sherman, Idaho, Carson City, Nev., Walla Walla, Spokane, Olympia, Fort Canby, and Fort Townsend, Wash., Portland, Roseburg, and Astoria, Oregon, the mean temperature for the current month was the lowest reported during the respective periods of observation. The lowest mean temperature for June was reported from Michigan and Wisconsin to east Texas in 1889; in the south Atlantic and east Gulf states and in the Sacramento Valley, California, in 1884; and from the lower lake region to the New Jersey and south New England coasts in 1881.

MAXIMUM TEMPERATURE.

At Nantucket, Mass., New London, Conn., Philadelphia, Pa., Moorhead and Saint Vincent, Minn., Valentine, Nebr., and Dodge City and Wichita, Kans., the maximum temperature for the current month was higher than previously reported for June.

The highest temperature reported for the current month by a regular station of the Weather Bureau was 111 at Yuma, Ariz., on the 7th. The temperature rose above 100 in the San Joaquin Valley, California, on the 4th, and in the Sacramento Valley, California, on the 30th. 100 and above was reached generally in Kansas, Oklahoma, and western Texas from the 21st to the 24th, and in South Dakota and adjoining parts of Minnesota and North Dakota on the 11th and 12th. The highest temperature of the month was noted generally in the Ohio Valley on the 19th, when the maximum values varied

from 91 to 94, and in the middle Atlantic and New England states on the 20th, when the temperature rose to 98 at Philadelphia, Pa., and Baltimore, Md. The lowest maximum temperature, 69, was reported at Eureka, Cal.; the maximum readings were below 80 on the extreme north Pacific coast and at San Diego, Cal., and the maximum values were below 90 over extreme northern New England, on the southeast New England coast, generally in the Lake region, over the middle and northern plateau and northern Rocky Mountain regions, and in the north Pacific coast states.

MINIMUM TEMPERATURE.

At Montrose, Colo., and Roseburg, Oregon, the minimum temperature for the current month was the lowest ever reported for June.

The lowest temperature reported by regular stations of the Weather Bureau was 32, at Lander, Wyo., on the 3d, and at Cheyenne, Wyo., on the 6th. Minimum temperature below 40 was noted in Upper Michigan, over the middle and northern Rocky Mountain and middle and northern plateau regions, and in the north Pacific coast states, except in the valley of the Columbia River. The highest minimum temperature, 71, was noted at Key West, Fla., and the minimum readings were above 60 along the south Atlantic coast and over the southern portions of the Gulf States and Texas.

RANGES OF TEMPERATURE.

The greatest daily range of temperature is shown in the table of miscellaneous meteorological data. The greatest monthly range of temperature, 61, was noted at Rapid City, S. Dak. From the Dakotas the monthly ranges decreased eastward to less than 40 on the south New England and middle Atlantic coasts, to less than 30 along the immediate south Atlantic coast and over the Florida Peninsula, to 18 at Key West, Fla., and to 20 at Galveston, Tex. The monthly ranges decreased westward to less than 30 at points on the immediate middle and north Pacific coasts, and to 22 at San Diego, Cal.

FROST.

Light frost was reported in northern New Hampshire and northern Vermont on the 8th, in Maine on the 17th, and at Taunton, Mass., on the 29th. Light frost was reported in central Ohio on the 7th and 8th, and in the interior and north portions of Lower Michigan on the 7th. Heavy frost on the 6th caused some damage about Cheyenne, Wyo. On the 10th and 18th heavy frost caused considerable damage about Jolon, Cal. Garden vegetation was damaged by frost about Snowville, Utah, on the 14th. Heavy frost killed tender vegetation at Show Low, Ariz., on the 16th. Light frost was noted at Roseburg, Oregon, the morning of the 19th. The observer reports that this was the latest frost ever noted at that station, and that the minimum temperature was the lowest on record for Roseburg for June. At Meadow Valley, Cal., garden vegetables were destroyed by heavy frost on the 19th. On the 22d tender vegetation about Lander, Wyo., was injured by frost. At Vernonia, Oregon, the temperature fell to 34 on the 29th, and heavy frost injured garden vegetables.

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada for June, 1893, as determined from reports of more than 2,000 stations, is exhibited on Chart III. In the table of miscellaneous meteorological data the total precipitation and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for

precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the precipitation is below the normal and subtracting when above.

In June the monthly precipitation is usually greatest over central and eastern portions of the Florida Peninsula, where

it exceeds 8.00. Along the south Atlantic and middle Gulf coasts, and in areas in Illinois and Iowa the monthly amount generally exceeds 6.00. Over the greater part of the country from the eastern Rocky Mountain slope to the Atlantic coast south of the 40th parallel the normal precipitation for June is 4.00 to 6.00. Along the immediate north Pacific coast and in areas in the lower valley of the Columbia River the monthly amount is usually 2.00 to 4.00. Over the plateau region and in California south of the 40th parallel the normal precipitation for June is generally less than 1.00.

In June, 1893, the monthly precipitation was greatest in north-central and west-central portions of the Florida Peninsula and in areas along the south Atlantic coast, Arkansas, and Louisiana, where it exceeded 10.00. The monthly amount was in excess of 8.00 over eastern portions of the south Atlantic states, over the greater part of the Florida Peninsula, in southeastern Virginia, in an area extending from south-central Arkansas over western Louisiana and extreme eastern Texas, and at stations in eastern Kansas. Along the immediate north Pacific coast 4.00 to 7.00 fell. In Arizona, southern Nevada, southern Utah, and over interior and eastern parts of California no precipitation was reported. In the Rocky Mountain and middle and northern plateau regions, and in extreme northern and western California less than 1.00 was reported.

DEPARTURE FROM NORMAL PRECIPITATION.

More than the usual amount of precipitation was reported in Ontario and the valley of the Red River of the North, in the south Atlantic states, southern Virginia, Kentucky, central and eastern Tennessee, in an area extending from Nebraska to the west Gulf coast, and along the Pacific coast north of the mouth of the Columbia River. The greatest excess in precipitation, 11.20, was noted at Charleston, S. C. At Norfolk, Va., the monthly rainfall exceeded the normal amount for June by 4.1, and the excess was greater than 3.00 at Shreveport, La., Cairo, Ill., and Tatoosh Island, Wash. Less than the usual amount of rain fell generally in the Canadian Maritime Provinces, the middle Atlantic and New England states, along the Florida and middle and east Gulf coasts, in the Lake region, middle and upper Ohio, upper Mississippi, and upper Missouri valleys, and over the Rocky Mountain and plateau and middle and south Pacific coast regions. The most marked deficiency in monthly precipitation was reported in eastern New Brunswick, at southern Lake Erie stations, and at Springfield, Ill., Duluth, Minn., and Huron, S. Dak., where the amount was 3.00, or more, less than usual. The deficiency was 2.00, or more, at Kittyhawk, N. C., Pensacola, Fla., Memphis, Tenn., and at stations in the lower lake region, the Ohio, upper Mississippi, and upper Missouri valleys, and southwestern Texas.

Considered by districts the average percentage of the normal in districts where the monthly precipitation was in excess was about as follows: north Pacific coast, 136; south Atlantic states, 132; west Gulf states, 124; extreme northwest, 112. In districts where the monthly precipitation was deficient the percentage of the normal was about as follows: middle Pacific coast, 13; northern plateau region, 25; southeast slope of the Rocky Mountains, 31; lower lake region and northeast slope of the Rocky Mountains, 61; Key West, Fla., 66; upper lake region, 74; New England, 75; upper Mississippi valley, 76; middle-eastern slope of the Rocky Mountains, 83; Missouri Valley, 87, and east Gulf states, 88. In the middle Atlantic states, the Ohio Valley and Tennessee, over the middle plateau region, and along the south Pacific coast the monthly precipitation averaged about normal.

The following table shows for certain stations, as reported by voluntary observers, (1) the average precipitation for June for a series of years; (2) the length of record during

which the observations have been taken and from which the average has been computed; (3) the total precipitation for June, 1893; (4) the departure of the current month from the average; (5) and the extremes for June during the period of observation and the years of occurrence:

State and station.	(1) Average for the month of June.	(2) Length of record.	(3) Total for June, 1893.	(4) Departure from average.	(5) Extremes for June.			
					Greatest.		Least.	
					Am't.	Year.	Am't.	Year.
Arizona.	Inches.	Years.	Inches.	Inches.	Inches.		Inches.	
Fort Apache	0.64	17	0.00	- 0.64	3.27	1882	0.00	†
Fort Mohave	0.05	22	0.00	- 0.05	1.00	1872	0.00	*
Whipple Barracks	0.16	22	0.00	- 0.16	1.24	1872	0.00	†
Arkansas.								
Keesee Ferry	4.89	11	5.60	+ 0.71	7.14	1882	2.18	1890
California.								
Fort Bidwell	1.09	22	0.01	- 1.08	4.29	1884	T.	1883
Riverside	0.07	12	0.00	- 0.07	0.52	1884	0.00	*
Colorado.								
Las Animas	1.67	10	1.84	+ 0.17	2.79	1884	0.05	1890
Florida.								
Merritts Island	7.38	15	7.67	+ 0.29	14.28	1889	3.32	1878
Georgia.								
Forsyth	4.72	19	6.79	+ 2.07	11.14	1886	1.48	1879
Idaho.								
Boise Barracks	0.96	19	T.	- 0.96	3.41	1884	T.	1893
Fort Sherman	1.39	9	0.75	- 0.64	2.11	1885	0.16	1882
Indiana.								
Lafayette	4.39	11	1.93	- 2.46	9.10	1882	1.93	1893
Indian Territory.								
Fort Supply	2.91	13	0.74	- 2.17	5.44	1885	0.40	1874
Iowa.								
Cresco	5.43	20	4.14	- 1.29	11.71	1890	2.46	1887
Kansas.								
Independence	5.19	21	3.93	- 1.26	11.26	1881	2.05	1875
Salina	3.67	10	.....	.....	6.11	1883	0.92	1862
Louisiana.								
Grand Coteau	6.33	10	7.40	+ 1.07	11.31	1886	2.50	1884
Maine.								
Orono	3.51	23	.....	.....	5.96	1892	0.73	1880
Maryland.								
Cumberland	3.90	21	2.12	- 1.78	10.08	1892	0.86	1885
Michigan.								
Kalamazoo	4.89	17	2.94	- 2.04	8.10	1883	1.78	1878
Missouri.								
Sedalia	5.58	14	3.40	- 2.18	9.24	1891	1.11	1890
Montana.								
Fort Custer	2.82	12	1.62	- 1.20	5.02	1891	0.90	1889
Nebraska.								
Fort Robinson	3.11	9	1.95	- 1.16	11.91	1892	0.60	1890
Genoa (near)	4.30	17	3.23	- 1.07	8.48	1891	1.50	1892
Nevada.								
Browns	0.24	22	0.00	- 0.24	1.13	1878	0.00	†
Carson City	0.44	15	0.00	- 0.44	1.97	1884	0.00	1893
New Hampshire.								
Hanover	3.64	21	4.72	+ 1.08	7.42	1892	1.74	1873
New Mexico.								
Fort Wingate	0.64	21	T.	- 0.64	3.15	1873	0.00	†
New York.								
Cooperstown	4.24	22	2.20	- 2.04	7.31	1872	1.94	1873
Plattsburg Barracks	3.01	22	2.42	- 0.59	7.62	1892	1.27	1881
North Carolina.								
Lenoir	4.31	21	3.50	- 0.81	10.30	1884	0.90	1881
Oklahoma.								
Fort Reno	4.67	10	3.25	- 1.42	10.33	1885	0.28	1888
Fort Sill	3.86	21	0.51	- 3.35	8.16	1885	0.21	1881
Oregon.								
Bandon	1.72	15	2.23	+ 0.57	6.11	1881	0.12	1883
Pennsylvania.								
Dyberry	2.93	22	3.06	+ 0.13	6.07	1892	1.13	1873
Grampian	4.51	15	2.25	- 2.26	9.85	1884	2.25	1863
Wellaboro	6.97	14	1.42	- 5.55	17.47	1881	1.42	1863
South Carolina.								
Statesburg	3.64	12	7.27	+ 3.63	7.27	1893	1.38	1881
South Dakota.								
Fort Sully	3.33	22	2.80	- 0.53	6.41	1890	1.50	1871
Texas.								
Austin	3.18	20	1.85	- 1.33	8.32	1872	0.00	1881
Silver Falls	2.44	6	1.39	- 1.05	3.84	1890	0.98	1887
Utah.								
Terrace	0.23	20	0.00	- 0.23	1.23	1886	0.00	†
Vermont.								
Stratford	3.61	20	2.05	- 1.56	7.86	1892	1.60	1884, 1885
Virginia.								
Dale Enterprise	5.63	13	3.23	- 2.40	11.00	1884	1.73	1882
Washington.								
Fort Townsend	1.46	18	1.31	- 0.15	4.10	1875	0.24	1886
West Virginia.								
Parkersburg	3.68	8	.....	.....	4.84	1890	1.30	1885
Wisconsin.								
Embarass	5.70	22	.....	.....	11.40	1880	1.75	1874
Madison	4.49	20	6.69	+ 2.20	9.31	1880	1.08	1886
Wyoming.								
Fort Washakie	1.08	9	0.62	- 0.46	2.98	1889	T.	1881

*Generally. † Frequently.

PRECIPITATION, JANUARY TO JUNE.

For the period January 1 to June 30, 1893, inclusive, the precipitation averaged about normal in the middle and south

Atlantic and New England states, the Ohio Valley and Tennessee, the upper Mississippi and Missouri valleys, the Lake region, the extreme northwest, the middle and southern plateau regions, and along the middle Pacific coast. Over the northern plateau region and along the north and south Pacific coasts the rainfall was two-tenths to three-tenths greater than usual. On the middle and southeast slopes of the Rocky Mountains the precipitation was about one-half, and in the Gulf States and on the northeast slope of the Rocky Mountains it was seven-tenths to eight-tenths of the usual amount for the period named.

YEARS OF GREATEST PRECIPITATION FOR JUNE.

At Norfolk and Cape Henry, Va., Charleston and Statesburg, S. C., and Port Eads, La., the monthly precipitation was the greatest noted for June during the respective periods of observation. The greatest precipitation for June was reported over the greater part of the Dakotas in 1890; from west-central Mississippi over central Texas in 1889; on the Pacific coast north of the 40th parallel in 1888; in Florida and the lower Rio Grande valley in 1887; in the interior of the south Atlantic states in 1886; in California south of the 40th parallel in 1884; in the lower Missouri valley in 1883; in the southern plateau region and a part of the upper Mississippi valley in 1882; on the southeast New England coast and from southern Lower Michigan over western Pennsylvania in 1881; over northern New York in 1879; in Upper Michigan in 1878; and along the south Atlantic coast in 1876.

YEARS OF LEAST PRECIPITATION FOR JUNE.

At Rochester, N. Y., Grampian and Wellsboro, Pa., Cleveland, Sandusky, and Toledo, Ohio, Lafayette, Ind., Huron, S. Dak., Santa Fe and Fort Stanton, N. Mex., Carson City, Nev., Boise Barracks, Idaho, Walla Walla, Wash., and Eureka, Cal., the monthly precipitation was the least reported during the respective periods of observation. The least precipitation for June was reported from eastern Washington over Montana and in the valley of the Red River of the North in 1889; and along the west Gulf coast and on the southeast slope of the Rocky Mountains in 1881.

EXCESSIVE PRECIPITATION.

The following tables show, by states, the number of stations reporting monthly precipitation to equal or exceed 10.00; precipitation to equal or exceed 2.50 in 24 hours; and precipitation to equal or exceed 1.00 in 1 hour in June, 1893:

Monthly precipitation to equal or exceed 10.00.

State.	Number of stations.	State.	Number of stations.
Florida	11	Georgia	1
South Carolina	9	Kansas	1
Louisiana	3	North Carolina	1
Arkansas	2		

Precipitation to equal or exceed 2.50 in 24 hours.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Louisiana	18	1, 1-2, 2, 2-3, 3, 4, 5, 5-6, 19, 20	North Carolina	10	5-6, 6-7, 7-8, 14, 16, 18-17, 28
South Carolina	17	1, 1-2, 2, 2-3, 6-7, 7, 7-8, 14, 15-16, 18, 18-19, 21, 28, 29	Nebraska	9	3-3, 4-9-10, 26, 27
Georgia	14	1, 2, 6, 8-9, 13, 13-14, 14-15, 15-16	Missouri	7	4, 10, 19-20, 21, 29, 30, 30
Alabama	13	*1, 5-6, 6	Virginia	6	1-2, 16, 16-17
Florida	11	8, 9, 13, 14-15, 15, 29-30, 30	Kansas	5	3-4, 4, 23, 25, 26
Tennessee	11	*1, 4-5, 5-6	Arkansas	4	3-5, 17-18, 26, 30
Mississippi	10	1, 1-2, 2, 4-5, 5, 8	Iowa	4	9-10, 10, 11
			Kentucky	4	4-5, 5
			New Jersey	4	22, 22-23, 26
			Illinois	3	2-3, 13, 24-25

Precipitation to equal or exceed 2.50 in 24 hours—Continued.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
North Dakota	3	1, 28-29, 30	Connecticut	1	6
Ohio	3	3-4, 4, 16	Indiana	1	21
Texas	3	1-2, 5-6, 18	Washington	1	9-10
Massachusetts	2	22, 22-23	Minnesota	1	14
New York	2	21-22, 26	Pennsylvania	1	22

Precipitation to equal or exceed 1.00 in 1 hour.

Arkansas	10	14, 17, 26, 28, 30, 29	New Jersey	3	6, 22
Georgia	10	5, 6, 13, 18, 22, 28, 29	North Dakota	3	26, 28
Kansas	10	4, 7, 14, 21, 22, 24, 25, 26, 30	Tennessee	2	5, 15
Missouri	10	13, 20, 21, 25, 30	North Carolina	2	5, 12
Florida	7	4, 7, 8, 9, 14, 18, 21, 28, 30	Illinois	2	4, 13
Louisiana	5	3-4, 8, 16, 17	Pennsylvania	2	22
Nebraska	5	3-9, 26, 29	Michigan	2	3
Iowa	5	9, 10, 11, 13, 21	Mississippi	2	16, 19
New York	4	11, 12, 26, 29	Connecticut	1	6
South Carolina	4	2, 7, 8, 14	Indiana	1	3
Texas	4	12, 15, 17, 19	Minnesota	1	14
Alabama	3	*3, 14	Ohio	1	4
			Virginia	1	22
			West Virginia	1	17
			Wisconsin	1	20

* May 31-June 1.

Table of excessive precipitation, June, 1893.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.	
		Amt.	Day.	Amt.	Day.
Alabama.					
Camden	Inches.	Inches.	Inches.	h. m.	3
Cordova		3.60	1	2.05	2 00
Do.		3.53	5		
Florence a		3.60	*		
Florence b		4.36	5		
Lynn a		3.20	*		
Maysville		2.60			
Mobile		3.66	5-6		
Montgomery		2.59	6		
Mount Willing		2.95	6		
Newberg		3.50	*		
Do.		4.88	5		
Selma			1.05	0 40	†
Do.			1.18	1 10	14
Tallasee Falls		2.93	6		
Tuscaloosa		2.52	5		
Tuscumbia b		2.59	*		
Do.		3.00	5		
Arkansas.					
Arkansas City			2.00	2 00	28
Bee Branch		3.00	30	3.00	2 30
Camden a	10.94		2.01	2 00	17
Camden b	10.24	2.70	5		
Do.		3.17	17-18	1.23	1 00
Conway		2.75	26	1.00	0 30
Fayetteville			2.75	1 20	26
Lonoke			2.25	0 30	30
Mount Nebo			1.26	1 00	30
Osceola		3.46	3		
Ozark			0.95	0 17	14
Stuttgart			1.19	1 00	30
Connecticut.					
Canton		2.97	6		
West Simsbury			2.20	2 00	6
Florida.					
Avon Park	13.49	2.65	30	1.50	1 00
Bristol		1.15	1 00	1.00	7
Brooksville	14.19		2.10	1 30	14
Do.		1.57	0 30	1.25	21
Do.		1.10	1 00	1.00	28
Chattahoochee Landing		3.90	8		
Fort Meade	13.12				
Gainesville	11.00	4.96	14-15		
Homeland	10.16	3.21	15		
Jupiter		3.30	29-30	2.20	1 00
Kissimmee	12.47	2.74	9		
Lake City	10.82				
Manatee	11.20				
Merritts Island		3.18	9		
Mullet Key				1.29	0 56
Myers	10.11	3.05	13		4
Ocala		2.64			
Plant City		2.63	14-15		
Saint Andrews Bay		3.97	14-15		
Saint Petersburg				2.04	1 10
Do.				1.06	1 00
Tampa	10.89			1.20	0 31
Tarpon Springs	10.72				
Georgia.					
Adairsville		2.80	6		
Alapaha		4.93	15-16		
Augusta				1.00	1 00
Athens a				1.42	0 30

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2-50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
<i>Georgia—Continued.</i>						
Athens b.	Inches.	Inches.		Inches.	h. m.	22
Bragg.		3-94	15		1-15	1 00
Carnack.		3-15	13			
Columbus.				1-90	0 30	28
Darien.		13-25	7-00	7-00	2 30	13
Eastman.		3-43	13-14			
Fleming.		3-10	8-9			
Hawkinsville.		3-29	2			
Hephzibah.		3-00	1	1-40	1 00	18
Lincolnton.				1-38	1 00	29
Lumpkin.		3-82	26	3-82	1 30	28
McArthur.		3-13	15	2-00	1 00	6
Newnan.		3-10	6			
Quitman.				2-50	1 30	28
Rome.				2-46	1 00	5
Thomasville.		4-75	14-15			
West Point.		2-73	6			
<i>Illinois.</i>						
Cairo.		3-03	2-3			
Carlinville.		2-54	24-25			
East Peoria.		2-65	13	2-05	0 40	13
Herrins Prairie.				1-20	0 20	4
<i>Indiana.</i>						
Laconia.				1-00	1 00	3
Marengo.		2-90	21			
Atlantic.		4-27	9-10	3-60	2 30	9
Centerville.				1-00	0 30	21
Des Moines.				1-10	1 10	11
Dubuque.		2-84	10	2-00	1 50	10
Indianola.		2-50	II			
Monticello.		2-59	10			
Mount Pleasant a.				1-12	0 40	13
<i>Kansas.</i>						
Atchison.				1-22	1 00	4
Concordia.				1-07	0 35	7
Havensville.		3-20	3-4			
Do.		2-60	23	1-13	1 00	14
Kansas City.						
Lebo.		13-10	2-57	4		
Do.		8-23	26	8-23	3 10	26
McPherson.		3-02	4			
Manhattan c.				1-50	1 00	30
Marion.		2-86	4			
Monument.		3-00	25	3-00	1 40	25
Plainville.				1-50	1 50	30
Wakefield.				2-02	0 53	24
Wamego.				2-16	1 30	22
Wichita.				1-08	1 00	21
<i>Kentucky.</i>						
Franklin.		4-49	4-5			
Greensburg.		2-53	4-5			
Munfordville.		3-11	5			
Russellville.		3-05	4-5			
<i>Louisiana.</i>						
Amite.		10-56	3-08	19		
Calhoun.		2-65	3	1-02	0 45	16
Coushatta.				2		
Do.		3-20				
Covington.		2-53	1-2	2-80	1 05	4
Donaldsonville.		4-03	19			
Grand Coteau.				2-02	2 00	8
Franklin.		2-50	20			
Lake Charles.		2-90	1			
Many.		11-20	4-50	1		
Minden.		2-69	3			
Monroe.				1-48	0 30	17
New Orleans.		3-02	5-6			
Oxford.		3-24	2-3			
Paincourtville.		11-39	4-20	19		
Pisquemine.		4-13	19			
Shreveport.		3-62	2-3	2-19	2 00	3
Sugar Ex. Station.		2-68	5			
Sugartown.		4-10	2			
Wallace.		2-59	4			
Winnifield.		3-50	3			
<i>Massachusetts.</i>						
Provincetown.		2-86	22			
South Dennis.		3-34	22-23			
Berlin.				1-52	1 15	3
Detroit.				1-80	1 00	3
<i>Minnesota.</i>						
Blooming Prairie.				1-00	0 30	14
Grand Meadow.		2-75	14			
<i>Mississippi.</i>						
Batesville.		3-76	4-5			
Biloxi.		3-25	1			
Brookhaven.		3-45	5			
Corinth.		3-10	1			
Crystal Springs.		3-50	5			
Fayette.				1-02	1 00	16
Greenville b.				1-27	1 00	19
Hazlehurst.		5-67	5			
Hernando.		2-85	1-2			
Moss Point.		3-50	8			
Pontotoc.		2-64	2			
Water Valley.		4-12	5			
Arthur.		3-31	4			

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2-50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.	
		Amt.	Day.	Amt.	Day.
<i>Missouri—Continued.</i>					
Bethany.	Inches.	Inches.		Inches.	h. m.
Brunswick.				1-10	0 45
Gallatin.		3-31	29-30		
Glasgow.		3-60	30		
Houston.		3-07	10		
Humansville.		2-70	19-20		
Kansas City.				1-23	0 20
Marshall.				1-08	1 00
New Boston.				1-85	0 45
New Palestine.		3-40	21		
Osceola.		3-02	21		
Palmyra.				1-52	0 50
Platte River.				1-00	1 00
Princeton.				1-08	1 00
Steelville.				1-50	0 15
Do.				1-43	0 45
<i>Nebraska.</i>					
Ashland.		2-79	3-4		
Do.		3-07	9-10		
Cooleyton.		2-50	27-28		
David City.		2-75	3		
Genoa.				1-50	1 00
Harvard.		3-00	29		
Kearney.				1-04	0 43
Kennedy.		2-83	26		
Lincoln.				1-77	1 00
Omaha.		3-55	3-4		
Tekamah.		3-40	3		
Turlington.		2-92	3		
Weeping Water.		2-56	3-4		
<i>New Jersey.</i>					
Ashbury Park.		2-85	26		
Chester.		2-82	22		
Dover.		3-55	22		
Locktown.		2-65	22-23		
Newark a.				1-22	1 00
South Orange.				1-50	1 15
<i>New York.</i>					
Ampersand.				1-27	0 35
Brookfield.				2-03	1 00
South Kortright.		2-63	21-22		
Turin.				1-32	1 20
Victor.		2-55	26		
<i>North Carolina.</i>					
Hatteras.		2-56	16-17		
Highlands.		2-50	5-6		
Horse Cove.				1-54	1 00
Do.				1-04	0 30
Lumberton.				4-47	16
Mount Airy.				2-55	14
Saxon.		3-10	28		
Smithfield.		10-12	3-75		
Do.		2-00	16		
Southern Pines.		3-20	7		
Southport.		3-72	7-8		
Tarboro.		3-35	6-7		
Willeyton.		2-50	7		
<i>North Dakota.</i>					
Churchs Ferry.		2-52	30		
Dawson.		2-50	1		
Ellendale.				2-00	0 30
Napoleon.				1-45	0 30
Power.		2-75	28-29		
<i>Ohio.</i>					
Granville.		3-26	3-4		
New Holland.		2-78	4		
Warren.		2-55	16		
West Milton.				2-25	1 00
<i>Pennsylvania.</i>					
Forks of Neshaminy.				1-44	0 55
Kennett Square.				1-25	0 17
Smiths Corners.		2-65	22		
<i>South Carolina.</i>					
Allendale.		2-60	2		
Batesburg.		12-05	4-40		
Do.		2-95	14		
Brewer Mine.		2-78	1-2		
Do.				2-65	7
Charleston.		16-50	5-79		
Do.		4-40	15-16		
Do.		3-07	18-19		
Connors.		10-73	3-30		
Effingham.				4-30	15-16
Flint Hill.				3-05	1
Florence.		12-61	4-00		
Do.		2-52	15		
Georgetown.		12-40	2-70		
Do.		3-17	18		
Kingstreet.				3-97	15-16
Marion.				3-95	16
Martins.		10-65	3-95		
Nichols.				2-80	15-16
Port Royal.				3-28	15-16
Pinopolis.		11-72	2-90		
Saint Georges.				3-40	15-16
Saint Stephens.		10-65	4-00		
Trial.		10-67	3-30		
<i>Tennessee.</i>					
Byrdstown.				1-12	0 30

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.		No. years noted.
		Amt.	Day.	Amt.	Time	
Tennessee—Continued.						
Charleston	Inches.	Inches.		Inches.	h. m.	
Chattanooga	3.41	5-6		.....	
Clarksville	3.44	5-6	1.48	0 55		5
Clinton	2.89	4-5				
Columbia	3.30	5-6				
Johnsonville	2.80	1				
Nashville	2.96	1				
Pikeville	2.73	1				
Ridgerton	2.70	5-6				
Rockwood	3.02	5-6				
Bugby	2.69	5-6				
	2.57	5				
Texas.						
Albany				1.06	1 00	15
Galveston				1.06	1 00	
Do.				1.15	1 05	17
Do.				1.10	0 32	19
Graham	3.08	1-2				
Huntsville	4.10	18				
Orange	2.64	5-6				
Virginia.						
Birdsnest		4.80	16-17			
Cape Charles		5.70	16-17			
Cape Henry		5.00	16-17			
Hampton		3.92	16			
Irwin		3.03	1-2			
Norfolk		5.97	16-17			
Stanardsville				1.46	1 00	22
Washington.						
Tatoosh Island	2.55	9-10				
Glenville				1.40	1 00	17
Hinton		2.53	5-6			
Milwaukee				1.60	1 30	20

* May 31st-June 1st.

MAXIMUM RAINFALL IN ONE HOUR OR LESS.

The following table is a record of the heaviest rainfall during June, 1893, for periods of five and ten minutes and one hour, as reported by regular stations of the Weather Bureau furnished with self-registering gauges:

Maximum rainfall in one hour or less.

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
Atlanta, Ga.	Inch.		Inch.		Inch.	
Bismarck, N. Dak.	0.20	2	0.35	2	0.93	2
Boston, Mass.	0.20	29	0.28	29	0.58	29
Buffalo, N. Y.	0.04	22	0.07	22	0.15	22
Cincinnati, Ohio	0.10	2	0.13	2	0.15	2
Chicago, Ill.	0.30	22	0.55	22	0.80	22
Cleveland, Ohio	0.35	20	0.45	20	0.80	10
Denver, Colo.	0.18	4	0.25	4	0.32	4
Detroit, Mich.	0.32	3	0.55	3	1.80	3
Dodge City, Kans.	0.05	25	0.11	25	0.30	25
Duluth, Minn.	0.10	21	0.20	21	0.30	21
Eastport, Me.	0.02	17	0.04	17	0.15	17
Galveston, Tex.	0.38	19	0.58	19	1.10	19
Indianapolis, Ind.	0.45	20	0.56	20	0.58	21
Jacksonville, Fla.	0.38	15	0.55	15	0.65	30
Jupiter, Fla.	0.35	30	0.70	30	2.20	30
Kansas City, Mo.	0.25	21	0.42	23	1.08	21
Key West, Fla.	0.30	13	0.43	13	0.53	13
Marquette, Mich.	0.07	24	0.12	24	0.20	24
Memphis, Tenn.	0.20	19	0.30	2	0.40	2
Milwaukee, Wis.	0.25	4	0.25	4	1.00	20
New Orleans, La.	0.30	6	0.47	6	0.66	6
New York, N. Y.	0.60	6	0.82	6	0.90	6
Norfolk, Va.	0.20	6	0.30	6	0.66	16, 17
Omaha, Nebr.	0.20	3	0.40	3	4.55	3
Philadelphia, Pa.	0.20	22	0.31	22	0.57	22
Pittsburg, Pa.						
Portland, Oregon						
Saint Louis, Mo.	0.01	10	0.02	10	0.08	10
Saint Paul, Minn.	0.15	12	0.21	12	0.42	12
Salt Lake City, Utah	0.26	21	0.39	21	0.68	21
San Diego, Calif.						
San Francisco, Calif.						
Savannah, Ga.	0.20	7, 22	0.48	7	0.88	7
Tampa, Fla.	0.40	8	0.70	8	1.25	8
Washington, D. C.	0.22	26	0.30	26	0.52	26
Wilmington, N. C.	0.25	7, 14	0.46	7	0.67	7

* Record incomplete. † Self-register out of order. ‡ Less than 0.05 in 1 hour.

The following tables show the number of years for which monthly precipitation to equal or exceed 10.00 inches, daily

precipitation to equal or exceed 2.50 inches, and hourly precipitation to equal or exceed 1.00 inch has been reported in the several states and territories for June during the last 23 years:

Excessive monthly precipitation.

State.	No. years noted.	State.	No. years noted.
Florida.	17	New Jersey	.....
Iowa	16	Virginia	.....
Texas	13	Maryland	.....
Georgia	13	Vermont	.....
Louisiana	13	Colorado	.....
Missouri	11	Connecticut	.....
Illinois	9	Rhode Island	.....
Nebraska	9	Washington	.....
Kansas	9	Arkansas	.....
North Carolina	9	Arizona	.....
Alabama	8	Delaware	.....
Indiana	8	District of Columbia	.....
South Carolina	8	Idaho	.....
Minnesota	7	Kentucky	.....
New Hampshire	6	Maine	.....
Ohio	5	Massachusetts	.....
Tennessee	5	Montana	.....
New York	5	Nevada	.....
Wisconsin	5	New Mexico	.....
Michigan	4	New California	.....
Pennsylvania	4	Oregon	.....
Mississippi	3	Utah	.....
The Dakotas	3	West Virginia	.....
Indian Territory	2	Rhode Island	.....

Excessive daily precipitation (24 hours).

Texas	20	Arkansas	10
Florida	19	Connecticut	8
Illinois	19	New Jersey	7
Kansas	18	Indian Territory	6
Iowa	17	Kentucky	6
Missouri	17	Maine	5
Georgia	15	Wisconsin	5
Nebraska	15	Vermont	4
The Dakotas	15	West Virginia	4
Minnesota	14	Montana	3
New York	14	New Hampshire	3
Michigan	13	Colorado	2
North Carolina	13	Delaware	2
Pennsylvania	13	Rhode Island	2
Tennessee	13	Idaho	2
South Carolina	12	New Mexico	1
Indiana	12	Wyoming	1
Maryland	12	Washington	1
Massachusetts	11	Arizona	0
Alabama	11	Nevada	0
Louisiana	11	California	0
Mississippi	11	Oregon	0
Virginia	10	Utah	0

Excessive hourly precipitation.

Kansas	18	New Jersey	5
Texas	17	Kentucky	3
Georgia	15	Maryland	3
Iowa	15	Connecticut	3
Florida	14	West Virginia	3
Illinois	14	Colorado	2
Michigan	14	Maine	2
Nebraska	13	Massachusetts	2
Tennessee	12	New Mexico	2
Missouri	11	Indian Territory	2
North Carolina	11	New Hampshire	2
Pennsylvania	11	Wyoming	2
The Dakotas	10	Arizona	1
Ohio	10	Idaho	1
Virginia	10	Montana	1
Louisiana	9	Vermont	1
Minnesota	9	Delaware	0
South Carolina	9	District of Columbia	0
Indiana	8	Nevada	0
Arkansas	7	California	0
Mississippi	7	Oregon	0
New York	7	Rhode Island	0
Wisconsin	7	Utah	0
Alabama	5	Washington	0

The following tables give exceptionally heavy monthly, daily, and hourly precipitation reported for June during the last 23 years:

Monthly.

Station and state.	Am't.	Year.	Station and state.	Am't.	Year.
	Inches.			Inches.	
Alexandria, La.	36.01	1886	Hypoluxo, Fla.	23.25	1892
Cheneyville, La.	26.59	1886	Sylvan Park, Mo.	21.86	1872
California, Mo.	23.90	1891	Archer, Fla.	20.19	1892

Daily (24 hours).

Station and state.	Amount.	Date.	Station and state.	Amount.	Date.
Alexandria, La.	.22-.27	16, 1893	Plattsmouth, Nebr.	.56	13-14, 1893
Point Pleasant, La.	16-.55	12-14, 1878	Greensboro, N. C.	.56	17, 1893
Pensacola, Fla.	10-.70	29, 1887	Cameron, La.	.57	22, 1893
Sour Lake, Tex.	9-.70	18, 1888	Crowley, La.	.56	6, 1893
Memphis, Tenn.	9-.67	8-9, 1877	Plattsmouth, Nebr.	.52	8-9, 1893
Orange, Tex.	9-.55	22-24, 1892	Hardeeville, S. C.	.50	9, 1893
Memphis, Tenn.	8-.95	7-8, 1877	Evergreen, Ala.	.50	27, 1893
Clear Lake, Nebr.	8-.75	1, 1875	Rockford, Iowa	.50	23, 1893
Mobile, Ala.	8-.50	26-27, 1888	New Orleans, La.	.47	29-30, 1893
Lebo, Kans.	8-.23	26, 1893	Traverse, S. Dak.	.40	5-6, 1893
Readington, N. J.	8-.10	25-26, 1884	Caldwell, N. Y.	.40	25-26, 1893
Cunningham, Kans.	8-.00	19-20, 1890	Aberdeen, Miss.	.40	21, 1893
Syracuse, N. Y.	8-.00	8, 1876	Corry, Pa.	.36	4, 1892
Nashua, Iowa	7-.50	14, 1888	Jeanerette, La.	.35	16, 1892
Wellsboro, Pa.	7-.45	*1889	Boston, Mass.	.35	9-10, 1875
Little Rock, Ark.	7-.40	28, 1879	Sycamore, Ill.	.33	22-23, 1892
Colebrook, Conn.	7-.40	7-8, 1874	Fort Adams, R. I.	.30	9-10, 1875
Salisbury, N. C.	7-.39	10, 1883	Fort Maginnis, Mont.	.28	20-21, 1888
Purdy, Tenn.	7-.10	14-15, 1876	Galveston, Tex.	.27	23-24, 1890
Salisbury, N. C.	7-.10	25, 1885	Merritts Island, Fla.	.27	23, 1893
Wilmington, N. C.	7-.03	30, 1876	Saint Marks, Fla.	.24	9, 1879
Darien, Ga.	7-.00	13, 1893	Wilmingon, N. C.	.22	2, 1882
Columbia, Tex.	7-.00	17, 1888	Fort Clark, Tex.	.20	18-19, 1877
Marmaton, Kans.	6-.60	15-16, 1893	Franklin, La.	.20	27, 1892
New Ulm, Tex.	6-.50	17-18, 1888	Marquette, Mich.	.20	20-21, 1878
Fort Scott, Kans.	6-.45	15-16, 1889	Mascoutah, Ill.	.20	18, 1892
Galveston, Tex.	6-.40	17, 1888	Yankton, S. Dak.	.20	30, 1875
Archer, Fla.	6-.34	27, 1892	Carthagena, Ohio	.18	20, 1876
Emilie, La.	6-.32	22-23, 1890	Raleigh, N. C.	.18	28-29, 1889
Alexandria, La.	6-.31	15, 1886	Des Moines, Iowa	.14	19-20, 1891
Saint Marys, Ga.	6-.20	12-13, 1877	Jacksonville, Fla.	.12	10-11, 1885
Charleston, S. C.	6-.16	11-12, 1876	Savannah, Ga.	.12	14-15, 1876
Savannah, Ga.	6-.10	26-27, 1887	Melissa, Tex.	.10	28, 1878
Cleburne, Tex.	6-.04	2, 1884	Helena, Ark.	.10	8, 1877
Columbia, Tex.	6-.00	7-8, 1894	Fort Randall, S. Dak.	.10	30, 1875
Logan, Iowa	6-.00	29-30, 1878	Cadiz, Wis.	.07	13-14, 1890
Larned, Kans.	6-.00	19, 1878	Bellefontaine, Ohio	.06	5-6, 1877
Norfolk, Va.	5-.97	16-17, 1893	Fayette, Iowa	.04	3-4, 1890
Block Island, R. I.	5-.97	10-10, 1881	Minden, La.	.02	23, 1892
New London, Conn.	5-.97	25-26, 1884	Omaha, Nebr.	.02	17, 1875
Cheneyville, La.	5-.90	10, 1889	Monroe, La.	.01	5-6, 1890
Cameron, La.	5-.89	17-18, 1893	Beardstown, Ill.	.00	21, 1885
Edgard, La.	5-.85	23, 1893	Grand Meadow, Minn.	.00	15, 1892
Maitoon, Ill.	5-.85	27, 1888	Marengo, Ind.	.00	18, 1890
Charleston, S. C.	5-.79	7-8, 1893	Tannersville, N. Y.	.00	26-27, 1889
Kingman, Kans.	5-.75	19, 1890	Sandwich, Ill.	.00	8, 1874
Somerset, Mass.	5-.74	9-10, 1875	Burlington, Kans.	.00	17, 1876
Cape Charles, Va.	5-.70	16-17, 1893	Danville, Ky.	.00	13, 1876
Hazelhurst, Miss.	5-.67	5, 1893	Ft. Independence, Mass.	.00	10, 1875
Helena, Ark.	5-.60	9, 1877	Cape Henry, Va.	.00	16-17, 1893

• May 31st-June 1st.

One hour and less.

One hour and less--Continued.

Station and state.	Amount.	Time.	Date.
Saint Louis, Mo.	.25	0 05	17, 1893
Washington, D. C.	.25	0 05	12, 1890
Cincinnati, Ohio	.25	0 05	3, 1891
Dodge City, Kans.	.25	0 05	5, 1891
Eastport, Me.	.25	0 05	24, 1891
Jupiter, Fla.	.25	0 05	13, 1889
Memphis, Tenn.	.25	0 05	16, 1891
Do.	.25	0 05	29, 1891
Saint Louis, Mo.	.25	0 05	16, 1891
New York, N. Y.	.25	0 05	10, 1890
Bismarck, N. Dak.	.25	0 05	26, 1890
Savannah, Ga.	.25	0 05	20, 1888
Do.	.25	0 05	20, 1888
Jupiter, Fla.	.25	0 05	14, 1892
Jacksonville, Fla.	.38	0 05	15, 1893
Galveston, Tex.	.38	0 05	19, 1893
Augusta, Ga.	.37	0 05	27, 1888
Jupiter, Fla.	.35	0 05	30, 1893
Chicago, Ill.	.35	0 05	20, 1893
Galveston, Tex.	.35	0 05	7, 1890
New York, N. Y.	.35	0 05	6, 1890
New Orleans, La.	.35	0 05	22, 1890
Savannah, Ga.	.35	0 05	11, 1890
Galveston, Tex.	.35	0 05	29, 1891
Kansas City, Mo.	.35	0 05	16, 1891
Detroit, Mich.	.32	0 05	3, 1893
Cleveland, Ohio	.30	0 05	10, 1891
Norfolk, Va.	.30	0 05	13, 1890
Bismarck, N. Dak.	.30	0 05	14, 1891
Key West, Fla.	.30	0 05	13, 1893
New Orleans, La.	.30	0 05	6, 1893
Cincinnati, Ohio	.30	0 05	22, 1893
Washington, D. C.	.30	0 05	21, 1891
Wilmington, N. C.	.30	0 05	16, 1890
Detroit, Mich.	.29	0 05	22, 1891
Savannah, Ga.	.29	0 05	7, 1893
Do.	.29	0 05	22, 1893
Detroit, Mich.	.28	0 05	28, 1890
Saint Paul, Minn.	.26	0 05	23, 1890
Saint Louis, Mo.	.26	0 05	21, 1893
New York, N. Y.	.25	0 05	17, 1893
Jupiter, Fla.	.25	0 05	3, 1890
Kansas City, Mo.	.25	0 05	21, 1893
Milwaukee, Wis.	.25	0 05	4, 1893
Wilmington, N. C.	.25	0 05	7, 1893
Do.	.25	0 05	14, 1893
Marquette, Mich.	.25	0 05	27, 1890

MONTHLY SNOWFALL (in inches and tenths).

Monthly snowfall was reported as follows: Colorado.—Pikes Peak, 7.7; Sunnyside, 4; Red Cliff, 2.4; Breckenridge, 2.2; Gold Hill, 1.8; Rico, 0.8; Como (near), 0.1. Nevada.—Hot Springs, 0.4.

HAIL.

Description of the more severe hailstorms reported for the month is given under "Local storms."

Hail was reported as follows: 1st, Colorado, Florida, Georgia, Missouri, North Carolina, South Carolina, Tennessee, and Texas. 2d, Arkansas, Colorado, Georgia, Minnesota, North Carolina, North Dakota, South Dakota, Texas,

and West Virginia. 3d, Colorado, Kansas, Michigan, and Nebraska. 4th, Arkansas, Kansas, Nebraska, Texas, Virginia, and Wyoming. 5th, Wyoming. 6th, Minnesota. 7th, Minnesota and New Mexico. 8th, Minnesota and North Dakota. 9th, Illinois, Minnesota, and Nebraska. 10th, Iowa, Missouri, and Washington. 11th, New Hampshire, New Mexico, New York, Oregon, Pennsylvania, and Vermont. 12th, Illinois, New Mexico, North Carolina, Oregon, South Carolina, Tennessee, and Wisconsin.

13th, Alabama, Florida, Missouri, Montana, Nevada, North Carolina, South Carolina, Tennessee, Washington, and Wisconsin. 14th, Colorado, Illinois, Iowa, Kansas, Minnesota, Mississippi, North Dakota, Ohio, South Carolina, South Dakota, Tennessee, Wisconsin, and Wyoming. 15th, Kansas, Michigan, Ohio, Pennsylvania, and Texas. 16th, Indiana, Michigan, Ohio, Texas, and Wisconsin. 17th, Arkansas, Georgia, and Ohio. 18th, Maine, New Mexico, North Dakota, Oregon, South Carolina, and Washington. 19th, Georgia and Oregon. 20th, Indiana, Louisiana, Minnesota, and South

Dakota. 21st, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Carolina, and Wisconsin. 22d, Georgia, Iowa, New York, North Carolina, South Carolina, and Virginia.

23d, Florida, Iowa, Kansas, Michigan, and Minnesota. 24th, Michigan, Ohio, and South Dakota. 25th, Alabama, Colorado, Illinois, Indiana, Kansas, Michigan, Missouri, Nebraska, Ohio, Oklahoma, Pennsylvania, and South Dakota. 26th, Colorado, Illinois, Indiana, Nebraska, North Carolina, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, Utah, and Virginia. 27th, Arkansas, Florida, Kansas, Montana, Nebraska, New York, and Pennsylvania. 28th, Alabama, Colorado, Georgia, Indiana, Kansas, Nebraska, North Carolina, North Dakota, Ohio, South Dakota, Virginia, West Virginia, and Wyoming. 29th, Colorado, Kentucky, Minnesota, Nebraska, North Dakota, South Dakota, Virginia, West Virginia, and Wyoming. 30th, Arkansas, Colorado, Connecticut, Indiana, Kansas, Minnesota, Missouri, Nebraska, New Hampshire, New York, and South Dakota.

WINDS.

The prevailing winds in June, 1893, are shown on Chart II by arrows flying with the wind.

In the New England and south Atlantic states, the Ohio Valley, and the Lake region the winds were generally from southeast to southwest; in the middle Atlantic states, from north to east; over the Florida Peninsula, from the southeast; in the west Gulf states, the upper Mississippi and Missouri valleys, and on the southeast slope of the Rocky Mountains, from southeast to south; on the northeast slope of the Rocky Mountains, and on the middle Pacific coast, from southwest to northwest; on the middle-eastern slope of the Rocky Mountains, from east to south; over the northern plateau region, and on the north Pacific coast, from south to west; and in the east Gulf states, Tennessee, the Red River of the North Valley, and the southern and middle plateau regions, variable.

HIGH WINDS.

(In miles per hour.)

Wind velocities of 50 miles, or more, per hour were reported at regular stations of the Weather Bureau as follows:

6th, 51, s., at Fort Canby, Wash. 7th, 59, s., at Huron, S. Dak. 9th, 58, s., at Fort Canby, Wash. 10th, 60, s., at Fort Canby, Wash. 11th, 56, sw., at Buffalo, N. Y. 13th, 86, sw., at Pikes Peak, Colo. 14th, 59, s., at Fort Canby, Wash.; 56, s., at Amarillo, Tex. 16th, 55, s., at Southport, N. C.; 54, e., at Charleston, S. C. 21st, 50, nw., at Saint Louis, Mo.; 50, w., at Red Wing, Minn. 22d, 60, w., at Fort Hill, S. C.; 56, s., at Carson City, Nev. 23d, 56, w., at Fort Buford, N. Dak.; 50, se., at Huron, S. Dak. 26th, 60, nw., at Colorado Springs, Colo.; 54, e., at Pueblo, Colo. 29th, 50, w., at Amarillo, Tex. 30th, 54, n., at Little Rock, Ark.

LOCAL STORMS.

(75th meridian time is used at regular Weather Bureau stations.)

1st.—Very heavy rain fell in South Carolina, Georgia, Alabama, Tennessee, and Ohio, and thunderstorms were reported in South Carolina, Ohio, and Michigan. At Columbia, S. C., 2.12 inches of rain fell the night of the 1st. A severe thunderstorm occurred at Longshore, S. C. Exceptionally heavy rain, high wind, and hail were reported at Hephzibah, Ga. Crops on low ground about Newburg, Ala., were damaged by heavy rain. A wind and hail storm at night caused considerable damage near Weatherford, Tex. At Nashville, Tenn., heavy rain, with thunder and high wind, continued during the afternoon and at night; many bridges

were washed away, and much damage was caused to crops on low land. In Noble and Huntington counties, Indiana, a number of buildings were destroyed by high wind. Violent thunderstorms occurred over a large area of Lower Michigan in the evening, causing damage of a minor character.

2d.—Heavy thunderstorms were reported in Georgia, Tennessee, Nebraska, and North Dakota, and severe local storms occurred in Texas. A destructive local storm passed through the southeastern part of Lavaca County, Tex., destroying everything in a path about one-half mile in width and 6 to 8 miles in length. A heavy thunder, rain, and wind storm visited San Antonio, Tex., in the morning. A large waterspout passed over the upper portion of Rio Grande City, Tex. A tornado moved east near Spanish Camp, Tex., between 3 and 4 p. m. The path of the storm was about 50 yards in width. Two persons were killed, and the damage to buildings was placed at \$700.

3d.—Severe thunderstorms were reported in Western New York, the Ohio Valley, Michigan, and Nebraska. At Detroit, Mich., streets and cellars were flooded by heavy rain. A heavy hailstorm of short duration was reported at Hays City, Kans. Damage by high wind and heavy rain was reported at Minneapolis, Kans. Hail caused considerable damage about David City, Nebr. At Omaha, Nebr., several houses were struck by lightning, and damage resulted from heavy rain. A severe thunder, rain, and hail storm moved southeast over Kearney, Nebr., in the afternoon.

4th.—Severe thunderstorms occurred in Maryland, Florida, the Ohio Valley and Tennessee, Missouri, Kansas, Arkansas, and Texas. Several houses were struck by lightning at Knoxville, Tenn. About 1 p. m. a severe thunder and rain storm moved north of east over Saint Louis, Mo., in a path 300 to 500 feet in width and about one-half mile in length, injuring 2 persons and causing considerable damage of a minor character. Near Fort Smith, Ark., a man was killed by lightning.

5th.—Thunderstorms, with heavy rain, occurred in southern New England, eastern New York, and New Jersey. Several buildings were struck by lightning.

7th.—A violent local storm was reported in the afternoon at Morris Island and adjacent islands southeast of Charleston, S. C. At Charleston the rainfall was exceptionally heavy, and a waterspout was observed north-northeast of that station. A severe thunderstorm occurred at Tampa, Fla., in the early morning.